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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,345	07/25/2000	Paul Timothy Spivey	LE9-00-022	7549

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EXAMINER

TRAN, LY T

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/625,345

Applicant(s)

SPIVEY ET AL.

Examiner

Ly T TRAN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-15, 17 and 19-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-15, 17 and 19-24 is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (USPN 5,821,961) in view of Harvey (USPN 5,779,837).

Sato discloses an ink jet print head assembly comprising:

- A heater chip (Fig.2: element 100)
- A substrate having a substantially flat surface (Fig.2: element 300)
- The heater chip is being glue to the substrate (Column 4: line 18-19)

However, Sato fails to teach the heater chip having a cavity and adhesive at least disposed within the at least one cavity.

Harvey teaches the groove (fig.4: element 32) formed in the outer wall of the base (Fig.4: element 30) of the piezoelectric which is analogous to the heater chip and adhesive at least disposed within the at least one groove (Column 4; line 46-55) to keep the adhesive not running all over place.

With respect to claims 2, Harvey teaches at least one cavity comprises at least one trench (Fig.4: element 32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Sato to have the groove/cavity on the heater chip as taught by Harvey. The motivation of doing so is to provide a channel into which excess glues may flow, further if excess glue is provided in the quantity to fill the grooves, it can more readily flow along the grooves and escape.

2. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (USPN 5,821,961) in view of Harvey (USPN 5,779,837) as applied to claims 1 and 2 above, further in view of Prior Art (Page 1).

Harvey teaches the trench (Fig.4: element 32).

However, the combination of Sato and Harvey fails to teach the heater chip includes at least one ink via.

Prior Art (Page 1) teach the heater chip includes at least one ink via to supply ink from the backside of the heater chip to the front side of the chip.

It would have been obvious to one having ordinary skill in the art at the time the invention as modify to have ink via n the heater chip as taught by the Prior Art. The motivation of doing so is to supply ink from the backside of the heater chip to the front side of the chip.

3. Claims 6-7are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (USPN 5,821,961) in view of Harvey (USPN 5,779,837) as applied to claim 1 above, further in view of Brandon et al. (USPN 5,751,324).

Sato teaches that the heater chip includes at least one outside edge (Fig. 2).

However, The combination of Sato and Harvey fails to teach at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing.

Brandon et al. teaches at least one trench (Fig.4: element 44+46) extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing (Column 2: line 61-63).

While Brandon does not teach providing the trenches in a heater chip, it does provide the general teaching to one of ordinary skill in the art of providing trenches extending to at least one outside edge at a bonding site for the purpose of allowing the adhesive to outgas during curing.

It would have been obvious to one having skill in the art at the time the invention was made to modify the teaching of Sato and Harvey to have at least one trench extending to at least one outside edge to thereby form at least one vent and at least one vent is configured for allowing the adhesive to outgas during curing as taught by Brandon et al. The motivation of doing so is the gas produced during of the adhesive is vented to the outside ambient environment.

#### ***Allowable Subject Matter***

4. Claims 8-15, 17, 19 and 20-24 are allowed.

- The primary reason for the allowance of claim 8 is the inclusion of the limitation of an ink jet print head comprising adhesive substantially entirely

disposed within at least one cavity, the adhesive adhering the backside of the heater chip to the substantially flat surface of the substrate. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

- The primary reason for the allowance of claims 9-14 is the inclusion of the limitation of an ink jet print head comprising adhesive substantially entirely contained within at least one cavity, the adhesive adhering the backside of the heater chip to the substrate. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.
- The primary reason for the allowance of claims 15, 17, and 19-21 is the inclusion of the limitation of an ink jet print head comprising a combination of the heater chip including a plurality of via, each of the at least one cavity surrounding a corresponding one of the plurality of via and at least one cavity being configured to reduce a width of a bond line between adjacent via of the plurality of vias. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

- The primary reason for the allowance of claims 22-24 is the inclusion of the limitation of an ink jet print head comprising a combination of the heater chip including a plurality of via and a plurality of trenches, each via of the plurality of vias surrounding by a corresponding trench of the plurality of trenches and adhesive substantially entirely contained within each of the plurality of trenches, adhesive adhering the backside of the heater chip to the substantially flat surface of the substrate and the adhesive sealing to completely prevent a flow of ink between the plurality of vias. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

5. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 5 is allowable over prior art of record because at least prior art have not been discloses or teach the adhesive being configure for preventing fluid communication between the plurality of ink vias in an area defined between the heater chip and the substrate.

### ***Response to Arguments***

6. Applicant's arguments filed 6/24/03 have been fully considered but they are not persuasive.

Applicant's argument that there is no motivation to modify Sato with the teaching of Harvey is not persuasive because Sato discloses a heater chip (element 100), a substantially flat surface substrate (element 300), Harvey teaches a piezoelectric which analogous with the heater chip to eject ink having groove (element 32) and adhesive filled in the groove so it 's obvious to having groove on the heater chip and the adhesive filled in the groove to prevent the adhesive to flow all over place and more readily flow along the grooves and escape. Therefore, the combination of Sato and Harvey still meets the limitation of the claim.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 703-308-0752. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 703-308-4896. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0967.



August 27, 2003



**Stephen D. Meier**  
**Primary Examiner**